SANTA CRUZ BIOTECHNOLOGY, INC.

HP1β (MAC353): sc-56704

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Chromatin assembly factor-1 (CAF-1) is a multisubunit protein complex that comprises three polypeptide subunits known as p150, p60 and p48. CAF-1 is a nucleosome assembly factor that deposits newly synthesized and acetylated histones H3/H4 into nascent chromatin during DNA replication. The p150 subunit of CAF-1 also supports the maintenance of heterochromatin, which requires the synthesis of both new histones and heterochromatin proteins and their orderly assembly during DNA replication. Heterochromatin is characterized as densely coiled chromatin that generally replicates late during S phase, has a low gene density and contains large blocks of repetitive DNA that is relatively inaccessible to DNA-modifying reagents. In late S phase, p150 directly associates with heterochromatin associated proteins 1 (HP1α, HP1β and HP1γ). As cells prepare for mitosis, CAF-1 p150 and some HP1 progressively dissociate from heterochromatin, coinciding with the phosphorylation of histone H3. The HP1 proteins reassociate with chromatin at the end of mitosis, as histone H3 is dephosphorylated.

REFERENCES

1. Smith, S., et al. 1989. Purification and characterization of CAF-I, a human cell factor required for chromatin assembly during DNA replication *in vitro*. Cell 58: 15-25.
2. Kaufman, P.D., et al. 1995. The p150 and p60 subunits of chromatin assembly factor I: a molecular link between newly synthesized histones and DNA replication. Cell 81: 1105-1114.
3. Verreault, A., et al. 1996. Nucleosome assembly by a complex of CAF-1 and acetylated histones H3/H4. Cell 87: 95-104.
4. Minc, E., et al. 1999. Localization and phosphorylation of HP1 proteins during the cell cycle in mammalian cells. Chromosoma 108: 220-234.
5. Taddei, A., et al. 1999. Duplication and maintenance of heterochromatin domains. J. Cell. Biol. 147: 1153-1166.
6. Murzina, N., et al. 1999. Heterochromatin dynamics in mouse cells: interaction between chromatin assembly factor 1 and HP1 proteins. Mol. Cell. 4: 529-540.
7. Koike, N., et al. 2000. Identification of heterochromatin protein 1 (HP1) as a phosphorylation target by Pim-1 kinase and the effect of phosphorylation on the transcriptional repression function of HP1(1). FEBS Letts. 467: 17-21.

CHROMOSOMAL LOCATION

Genetic locus: CBX1 (human) mapping to 17q21.32; Cbx1 (mouse) mapping to 11 D.

SOURCE

HP1β (MAC353) is a rat monoclonal antibody raised against the C-terminus of HP1β of mouse origin.

PRODUCT

Each vial contains 1.0 ml culture supernatant containing IgG_{2b} with < 0.1% sodium azide.

APPLICATIONS

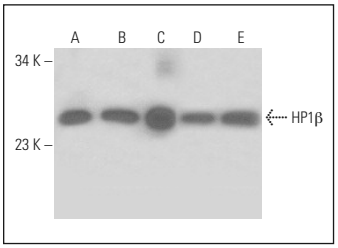
HP1β (MAC353) is recommended for detection of the M31 of mouse origin and the homologous HP1β of human origin of mouse and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:10-1:200), immunoprecipitation [10-20 µl per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200).

Suitable for use as control antibody for HP1β siRNA (h): sc-35587, HP1β siRNA (m): sc-35588, HP1β shRNA Plasmid (h): sc-35587-SH, HP1β shRNA Plasmid (m): sc-35588-SH, HP1β shRNA (h) Lentiviral Particles: sc-35587-V and HP1β shRNA (m) Lentiviral Particles: sc-35588-V.

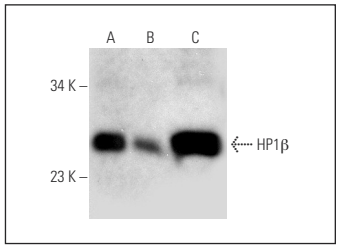
Molecular Weight of HP1β: 25 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, A-431 nuclear extract: sc-2122 or HeLa whole cell lysate: sc-2200.

DATA



HP1β (MAC353): sc-56704. Western blot analysis of HP1β expression in A-431 (**A**), HeLa (**B**) and Hep G2 (**C**) nuclear extracts and C6 (**D**) and HeLa (**E**) whole cell lysates.



HP1β (MAC353): sc-56704. Western blot analysis of HP1β expression in non-transfected 293T: sc-117752 (**A**), mouse HP1β transfected 293T: sc-125469 (**B**) and NIH/3T3 (**C**) whole cell lysates.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.